



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,244	11/14/2001	Henry W. Koertzen	884.572US1	5389
21186	7590	12/08/2004	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			TRUJILLO, JAMES K	
			ART UNIT	PAPER NUMBER
			2116	

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/992,244

Applicant(s)

KOERTZEN ET AL.

Examiner

James K. Trujillo

Art Unit

2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 041202.031504.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. The office acknowledges the receipt of the following and placed of record in the file: IDS dated 4/12/2002 and IDS dated 3/15/2004.
2. Claims 1-26 are presented for examination.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the socket as per claim 6 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 10 recites “wherein the first portion of the plurality of the power connection terminals is equal to the first portion of the plurality of return connection terminals” and similar language for the second portion. The applicants have not particularly pointed OUT how and distinctly claim in which way that the portion of the power connection terminals is equal to the return connection terminal. After reading the specification, the examiner cannot make a determination if the applicants are referring to the number, the current or some other parameter in which the portions are equal. For examination purposes it will be assumed that claim 10 is meant to read that the current in the first portion of the plurality of power connection terminals is equal to the current in the first portion of the return connection, and where in the current in the second portion of the plurality of power connection terminals is equal to the current in the second portion of the return connection.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claim 1-5, 7-12 and 14-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Pohlman et al., U.S. Patent.

8. As to claims 1 and 5, Pohlman teaches a power supply system, comprising a first voltage source having a first output voltage (output at 336 from regulator 302, figure 3). Pohlman also uses second voltage source having a second output at a second voltage approximately equal to the first voltage (output at 338 from regulator 304 in figure 3). Specifically, Pohlman discloses that by supplying power to various units the system maybe configured to tailor supplied power to portions of a microprocessor rather than supplying one operating voltage to the entire microprocessor, implicitly teaching that the voltages may be approximately equal or different. Further, Pohlman teaches a circuit element (microprocessor 334) having a plurality of power connection terminals (at 336, 338, 340 and 342 in figure 3) and a plurality of return connection terminals (not shown but must exist as electrically coupled ground potential paths). Pohlman further teaches wherein a first portion of the plurality of power connection terminals (at 336 in figure 3) and a first portion of the plurality of the return connection terminals (not shown) are

Art Unit: 2116

electrically connected to the first output. Pohlman also teaches wherein a second portion of the plurality of power connections terminals (at 336 in figure 3) and a second portion of the plurality of return connection terminals (not shown, but must exist as in the same way as the first portion of the plurality of return connection terminals) are connected to the second output. The return connections in Pohlman are not shown but must exist as ground return paths. Ground paths electrically couple the microprocessor and the regulator. If the return did not exist the microprocessor and the regulator would not be at a relative potential and would more than likely cause the system to fail.

9. As to claim 2, Pohlman taught the power supply system according to claim 1 as described above. Pohlman further teaches wherein the first and second voltage sources are included in a single voltage regulator (one or more regulators may be used, col. 7 lines 31-32).

10. As to claim 3, Pohlman taught the power supply system according to claim 1 as described above. Pohlman further teaches wherein the first voltage source is included in a first voltage regulator and the second voltage source is included in a second voltage regulator (regulators 302 and 304, figure 3).

11. As to claim 4, Pohlman taught the power supply system according to claim 3 as described above. Pohlman further taught wherein the first output includes a first phase and the second output includes the second phase, further comprising a phase synchronizing connection between the first and second regulators (sensing circuits 336-342 to reduce transients, col. 7 lines 7-20). Specifically, the sensing circuits are used to respond to reduce transient and thereby must keep the outputs in phase.

12. As to claims 7 and 8, Pohlman taught the power supply according to claim 1 as described above. Pohlman further teaches a third (and fourth) voltage source having a third (and fourth) output at a third (and fourth) voltage approximately equal to the first voltage, wherein a third (and fourth) portion of the plurality of power connection terminals and a third (and fourth) portion of the plurality of return connection terminals are connected to the third (and fourth) output (regulators 306 and 308, figure 3).

13. As to claim 9, Pohlman taught the power supply system according to claim 8 as described above. Pohlman further taught wherein the first output includes a first phase and the second output includes the second phase a third output includes a third phase, and the fourth output includes a fourth phase, further comprising a phase synchronizing connection between the first and second regulators (sensing circuits 336-342 to reduce transients, col. 7 lines 7-20).

14. As to claim 10, Pohlman taught the power supply system according to claim 1 as described above. Pohlman further teaches wherein the current in first portion of the plurality of power connection terminals is equal to the current in first portion of the plurality of return connection terminals, and wherein the current in the second portion of the plurality of power connection terminals is equal to the current in the second portion of the plurality of return connection terminal (col. 6 lines 15-37). Specifically, Pohlman teaches that each portion may be supplied independent of the other portions. As such, the current in the return terminal (not shown but must exist) would equal the current from power terminal for each portion.

15. As to claims 11-12 and 14-25, Pohlman together with AAPA taught the claimed power supply system therefore together they also taught the claimed circuit board and the claimed method of providing power to a circuit element.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 6, 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pohlman in view of Applicant's Admitted Prior Art (AAPA).

18. As to claim 6, Pohlman taught the power supply system according to claim 1 above. The circuit element of Pohlman is a microprocessor. Furthermore, Pohlman discloses that the microprocessor is mounted using for example bump technology (col. 7 lines 47-52) on to a printed circuit board and that the regulator may be packaged outside the microprocessor. Pohlman does not disclose wherein the circuit element is a socket.

AAPA teaches that sockets are used with microprocessors to attach a microprocessor to a motherboard (pages 1 and 2). Sockets are used because they allow the microprocessor to be changed without causing damage to either the board or microprocessor increasing the flexibility of the system.

It would have been obvious to one of ordinary skill in the art, having the teachings of Pohlman and AAPA before them at the time of the invention, to modify the power supply system of Pohlman to use a socket as the circuit element in order attach the microprocessor to the printed circuit board.

Art Unit: 2116

One of ordinary skill in the art would have made the modification to allow the processor to be changed without causing damage to either the board or microprocessor to increase the flexibility of the system.

19. As to claims 13 and 26, Pohlman together with AAPA taught the claimed power supply system therefore together they also taught the claimed circuit board and the claimed method of providing power to a circuit element.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 5,561,792 A to Ganapathy. This reference teaches uniformly supplying current to clock generators through various pins of a processor

U.S. Pat. No. 5,574,697 A to Manning. This reference teaches using several regulators to supply power to a memory device.

U.S. Pat. No. 5,952,733 A to Johnston. This reference teaches supplying power to different loads using different power supplies.

U.S. Pat. No. 6,075,741 A to Ma et al. This reference teaches supplying power to different portions of an array of memory.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James K. Trujillo whose telephone number is (571) 272-3677.

The examiner can normally be reached on M-F (7:30 am - 5:00 pm) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2116

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James Trujillo
December 6, 2004


LYNNE H. BROWNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600-2100